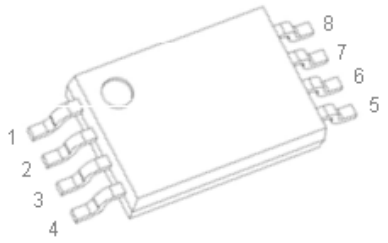
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD

TSSOP8 Plastic-Encapsulate MOSFETS

CJS2013 Dual N-Channel MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$TYP	I_D
20V	10.5 mΩ@4.5V	6A
	11.4 mΩ@3.8V	
	12.3 mΩ@3.1V	
	13.5 mΩ@2.5V	

TSSOP8



FEATURE

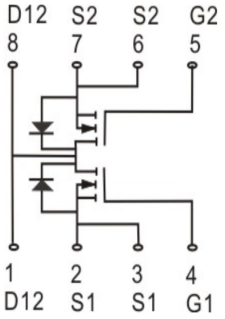
- TrenchFET Power MOSFET
- Excellent $R_{DS(on)}$
- Low Gate Charge
- High Power and Current Handing Capability
- Surface Mount Package

APPLICATION

- Battery Protection
- Load Switch
- Power Management

MARKING

Equivalent Circuit



ABSOLUTE MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±10	V
Continuous Drain Current	I_D	6	A
Pulsed Drain Current (note 1)	I_{DM}	25	A
Thermal Resistance from Junction to Ambient (note 2)	$R_{\theta JA}$	62.5	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~+150	℃
Lead Temperature for Soldering Purposes(1/8'' from case for 10 s)	T_L	260	℃

MOSFET ELECTRICAL CHARACTERISTICS

T_a=25℃ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
STATIC CHARACTERICTISCS						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	20			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =18V,V_{GS} = 0V			1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±10V, V_{DS} = 0V			±100	nA
Gate threshold voltage (note 3)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.5	0.7	1.0	V
Drain-source on-resistance (note 3)	$R_{DS(on)}$	V_{GS} =4.5V, I_D =3A	9.0	10.5	13.5	mΩ
		V_{GS} =3.8V, I_D =3A	9.5	11.4	14.0	mΩ
		V_{GS} =3.1V, I_D =3A	10.5	12.3	15.0	mΩ
		V_{GS} =2.5V, I_D =3A	12.0	13.5	16.5	mΩ
Forward tranconductance (note 3)	g_{FS}	V_{DS} =5V, I_D =4.5A		10		S
Diode forward voltage (note 3)	V_{SD}	I_S=1.25A, V_{GS} = 0V			1.2	V
DYNAMIC CHARACTERICTISCS (note4)						
Input Capacitance	C_{iss}	V_{DS} =8V,V_{GS} =0V,f =1MHz		935		pF
Output Capacitance	C_{oss}			170		pF
Reverse Transfer Capacitance	C_{rss}			145		pF
SWITCHING CHARACTERICTISCS (note 4)						
Turn-on delay time	$t_{d(on)}$	V_{DD}=10V,V_{GS}=4V, I_D=1A,R_{GEN}=10Ω		16		ns
Turn-on rise time	t_r			8		ns
Turn-off delay time	$t_{d(off)}$			48		ns
Turn-off fall time	t_f			14		ns
Total Gate Charge	Q_g	V_{DS} =10V,V_{GS} =4.5V,I_D=4A		16		nC
Gate-Source Charge	Q_{gs}			1.3		nC
Gate-Drain Charge	Q_{gd}			1.8		nC

Notes :

1.Repetitive rating：Pluse width limited by maximum junction temperature

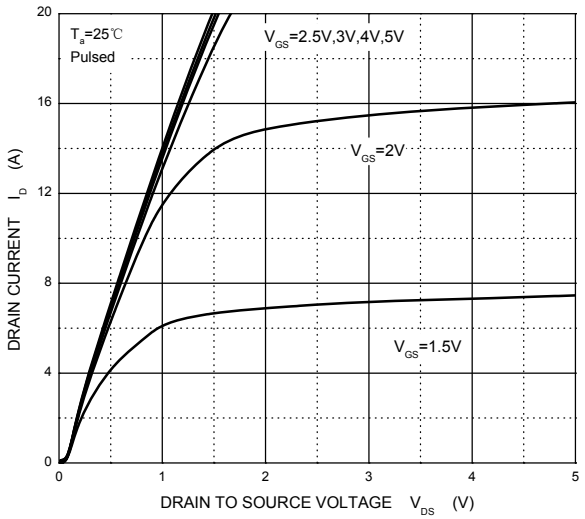
2.Surface mounted on FR4 board using 1 square inch pad size,1oz single-side copper.

3. Pulse test : Pulse width≤300μs, duty cycle≤2%.

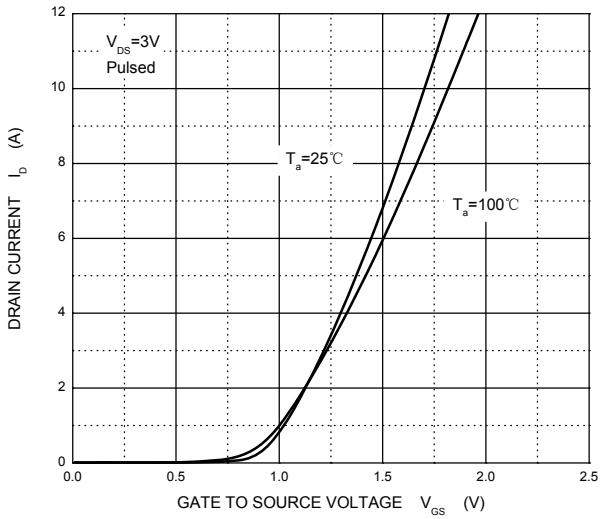
4. Guaranteed by design, not subject to production.

Typical Characteristics

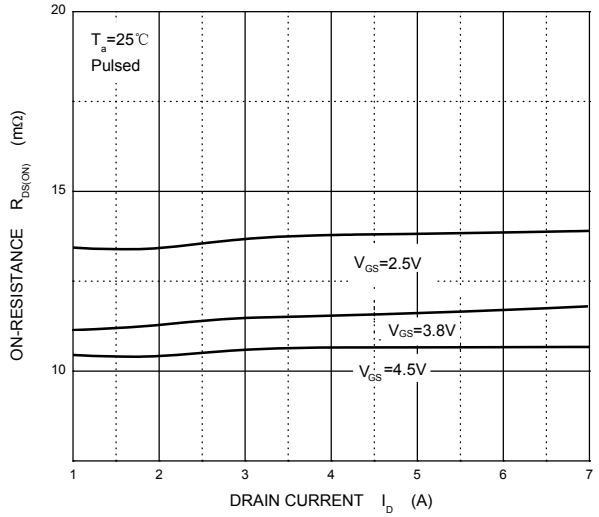
Output Characteristics



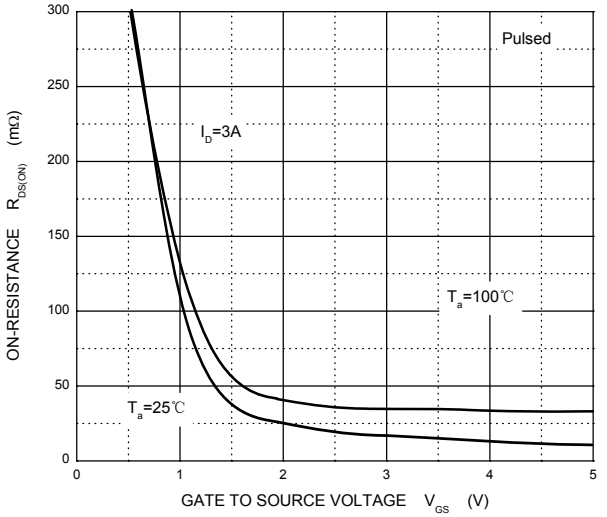
Transfer Characteristics



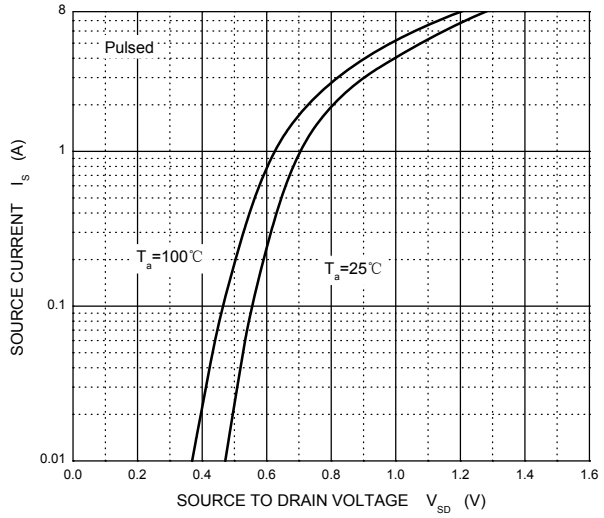
$R_{DS(ON)}$ —— I_D



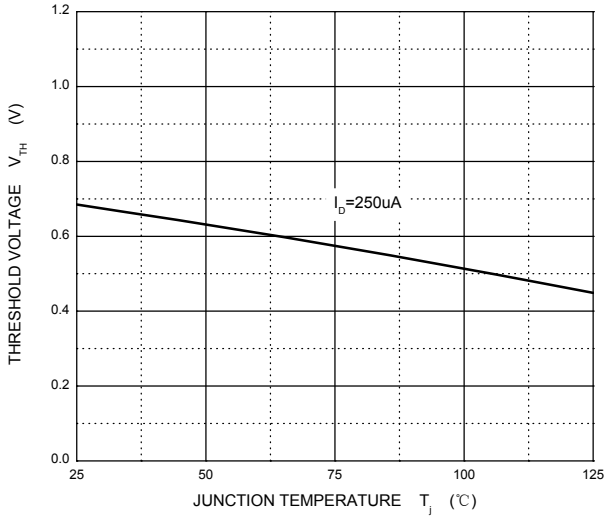
$R_{DS(ON)}$ —— V_{GS}



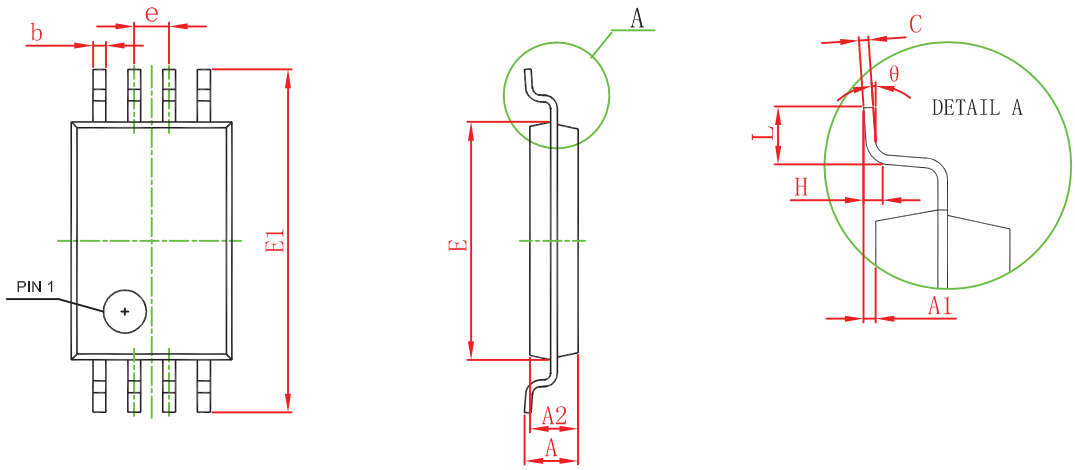
I_S —— V_{SD}



Threshold Voltage

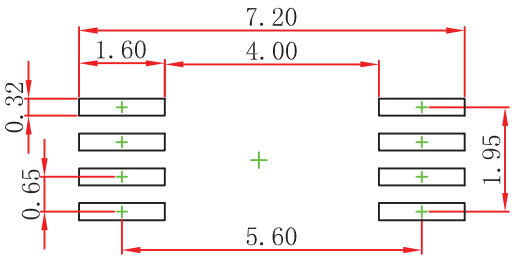


TSSOP8 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	**Max**	**Min**	**Max**
D	2. 900	3. 100	0. 114	0. 122
E	4. 300	4. 500	0. 169	0. 177
b	0. 190	0. 300	0. 007	0. 012
c	0. 090	0. 200	0. 004	0. 008
E1	6. 250	6. 550	0. 246	0. 258
A		1. 200		0. 047
A2	0. 800	1. 000	0. 031	0. 039
A1	0. 050	0. 150	0. 002	0. 006
e	0. 65 (BSC)		0. 026 (BSC)	
L	0. 500	0. 700	0. 020	0. 028
H	0.25(TYP		0.01(TYP	
θ	1°	7°	1°	7°

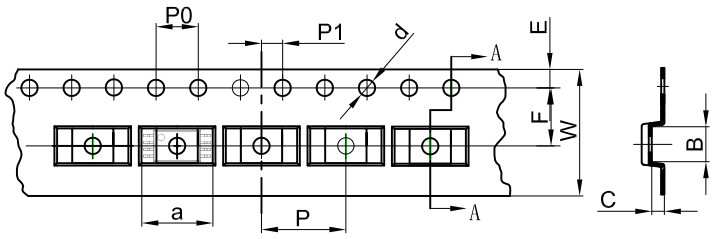
TSSOP8 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

TSSOP8 Tape and Reel

TSSOP8 Embossed Carrier Tape



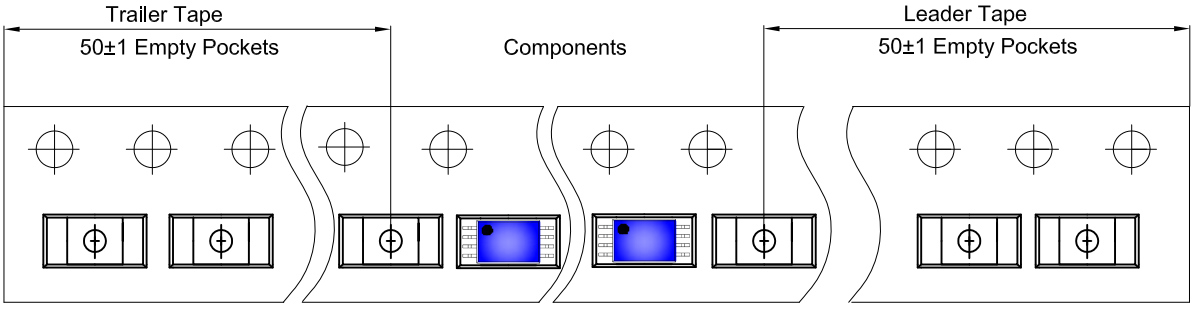
Packaging Description:

TSSOP8 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 13" or 33cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

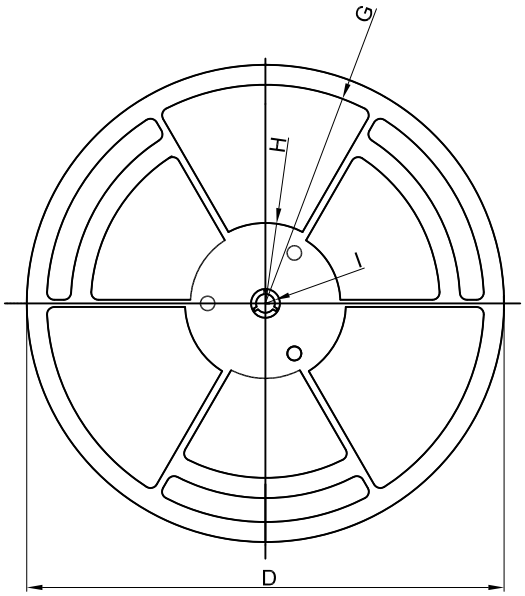
ALL DIM IN mm

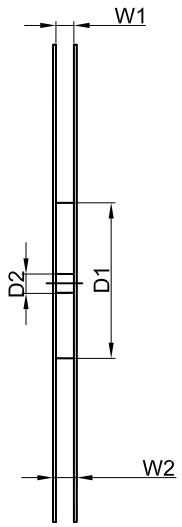
Dimensions are in millimeter										
Pkg type	a	B	C	d	E	F	P0	P	P1	W
TSSOP8	6.76	3.30	1.20	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

TSSOP8 Tape Leader and Trailer



TSSOP8 Reel





Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
13"Dia	Ø330.00	100.00	13.00	R151.00	R56.00	R6.50	12.40	17.60

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3,000 pcs	13 inch	3,000 pcs	336×336×48	24,000 pcs	445×355×365	

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